Transforming higher education to strengthen links between universities and the livestock sector in Argentina and Peru – project EDULIVE

M. Wurzinger¹, S. Eichelberg¹, L. Picardi², G. Nievas³, G. Gutierrez⁴, C. Gomez⁴, H. Cucho⁵, J.P. Gutierrez⁶ & F. Lhoste⁷

¹BOKU-University of Natural Resources and Life Sciences, Gregor-Mendel-Straße 33, 1180 Vienna, Austria  
m.wurzinger@boku.ac.at (Corresponding Author)  
²Universidad Nacional de Rosario, Campo Experimental Villarino CC Nº 14, S2123 Zavalla, Argentina  
³Universidad Nacional del Comahue, Ruta 151 – C.C. 85, R8303 Cinco Saltos, Argentina  
⁴Universidad Nacional Agraria La Molina, La Molina 15024, Lima 12, Peru  
⁵Universidad Nacional San Antonio Abad del Cusco, Av. de la Cultura Nro. 733, 08000 Cusco, Peru  
⁶Universidad Complutense de Madrid, Avda. de Séneca, 28040 Madrid, Spain  
⁷Montpellier SupAgro, 1101 avenue Agropolis, 34090 Montpellier, France

Summary

The livestock sector in Argentina and Peru is essential for people and economy, but is calling for better trained professionals to address current challenges. The EU-funded project EDULIVE (2015-2018) uses the knowledge triangle approach and aims at strengthening the cooperation between universities and the stakeholders in the livestock sector in Argentina and Peru. This has been achieved by applying diverse actions in four core aspects: (i) developing possible cooperation mechanisms between universities and the different actors in the livestock sector, (ii) upgrading equipment for teaching purposes, (iii) training university staff in different aspects like new teaching methods, e-learning and quality control mechanisms for evaluation of courses and study programs as well as (iv) project evaluation, visibility and dissemination. Its goals have proven relevant in surveys and feedback and the 18 project partners have realized many successful activities like pilot internships, workshops and courses, equipment purchase, expert talks and research visits to European universities.

Keywords: animal science, higher education, Argentina, Peru, knowledge triangle, curriculum development

Introduction

In Argentina and Peru the livestock sector is an essential job provider in rural areas and important contributor to the national GDP. Current challenges like climate change make the need for livestock professionals, able to respond to changing needs and demands of the sector stakeholders, apparent. According to the concept of the knowledge triangle, “the contribution of higher education to jobs and growth, and its international attractiveness, can be enhanced through close, effective links between education, research, and innovation (…)”. Applying this to the livestock sector it seems vital to strengthen the cooperation between universities for animal science and the relevant livestock sector stakeholders, promoting the offer of demand-driven Higher Education and with it the ability to react to current needs and expectations of the sector.
This is the starting point of the project “EDULIVE – Transforming higher education to strengthen links between universities and the livestock sector” – an EU project within the Erasmus+ programme, from 2015-2018. Focused on pilot cases – 4 universities in Peru and Argentina together with diverse stakeholder organizations working in the field of alpaca fibre, dairy and sheep wool and meat, ranging from farmers’ associations, NGOs, private businesses to national research organizations – it serves as a hub and platform for the development of cooperation mechanisms. This exchange has a potentially high impact on the relevance of Animal Science curricula, research activities and the economy.

**Material and methods**

In order to achieve the project goals, 18 partners in Europe and South America put their joint effort into diverse actions in four core areas from analysis to cooperation activities.

**Consortium**

There are 18 institutions from five countries participating, including universities, research institutions, NGOs, farmers’ associations and private companies in the agricultural sector.

- **Europe:** BOKU-University of Natural Resources and Life Sciences (Austria, coordinating unit), MSA-Montpellier SupAgro (France), UCM-Universidad Complutense de Madrid (Spain)
- **Peru:** UNALM-Universidad Nacional Agraria La Molina, UNSAAC-Universidad Nacional de San Antonio Abad del Cusco, INIA-Instituto Nacional de Innovación Agraria, AGISF-Asociación de Ganaderos de la Irrigación San Felipe, DESCO-Centro de Estudios y Promoción del Desarrollo, Gloria, Inca Tops, Michell&Cia,
- **Argentina:** UNR-Universidad Nacional de Rosario, UNCo-Universidad Nacional del Comahue, INTA-Instituto Nacional de Tecnología Agropecuaria, AACM-Asociación Argentina Criadores de Merino, FECORSUR-Federación de Cooperativas de la Región Sur, Fuhrmann, SRB-Sociedad Rural Bariloche.

**Cooperation mechanisms**

The cooperation mechanisms between universities and livestock sector stakeholders – the main aspect of the project – can only be established by first analyzing the status-quo of student and graduate satisfaction as well as experience of the stakeholders employing the graduates. Based on this analysis new forms of cooperation are discussed.

**Upgrading tools**

To provide the necessary tools for the project activities to be carried out, all academic project partners can purchase equipment.

**Staff training**

In the course of the project, different staff trainings for professors are planned on topics like didactics, E-Learning and quality management. Also, professors from Latin America travel to European universities sharing of experience and ideas.
Quality and sustainability

All steps of the project are documented by all project members and monitored on a regular basis to provide transparency. All activities receive feedback and evaluation, and results, technical and financial data is collected in reports to implement possible improvements during the course of the project. Dissemination of results plays a big role. Thus, information and progress is shared online and in meetings to involve authorities and the public.

Results and discussion

Process and achievements

Initially, a survey was carried out in all four universities in Argentina and Peru to assess the level of satisfaction of students with their current study programme and feedback from graduates on market entry and skills they found lacking in their current jobs. Feedback from the stakeholders employing graduates and their experience with them was also included. Results showed above all that more practical expertise, as well as communication and management skills are required – abilities found to be currently lacking by both employees and employers.

To initiate the cooperation process, workshops between the stakeholders and university staff were held in order to explore possible cooperation mechanisms and discuss realities, needs and expectations. There were six cooperation workshops in Peru – three in the alpaca fibre sector, three focused on dairy producers. In Argentina, there were two large workshops in the field of sheep production. The meetings in both countries proved to be highly successful with 9 resulting internships from UNALM (Lima), three from UNSAAC (Cusco), two from UNR (Rosario) and one from UNCO (Neuquén). The internships lasted two months on average (co-financing by the universities allowed for an even longer stay). Student reports, monitoring visits by professors and joint meetings led to valuable feedback. Most interns were very happy upon the opportunity of a long practical experience and showed a lot of effort. Furthermore, expert talks by the project partners in the livestock sector were organized at all universities and helped cooperation flourish even more by informing the students (and staff) about current topics of importance in the livestock sector. There were 3 talks at both UNALM and UNSAAC, one at UNR and two at UNCO. In Argentina, synergies could be used in a smart way by the joint organization of a panel discussion in Neuquén with experts of INTA, AACM, FECORSUR and Fuhrmann present, together with representatives of UNR and 44 students of UNCO including presentations and an active discussion amongst all parties. So-called ‘expert visits’ of the stakeholders at each university of their region ensure public appearance and enable students to get to know the stakeholders and their institutions.

The phase of tool upgrading is finished. Each university purchased their equipment, from basics like laptops and video projectors to cameras, camcorders and interactive whiteboards. Prior identification of individual needs ensured upgrades based on actual necessities for the respective circumstances.

Regarding staff training, the following courses were held in each university: (i) “Transversal Skills - Linking university training to the livestock sector” (ii) “E-Learning: a new tool in higher education” and (iii) course on “quality management” led to the elaboration of proposals for implementing more practical aspects in the curricula. Eight professors linked
to internships and practical teaching at the Latin American universities spent two weeks at UCM in Spain and MSA in France. Their experiences were very diverse and beneficial - both on a professional and personal level - which is reflected by considerable feedback and internal and public sharing of their opinion from different realities of curricular structures in Europe.

Quality is ensured by extensive project management and evaluation mechanisms. All activities are centrally coordinated by BOKU to provide an integral view and smooth carrying out of planned activities, but each project partner contributes content, opinion and administration. The research institutions forward information to the smaller companies in the agricultural sector to facilitate communication and processes. Each activity is evaluated by feedback forms, monitoring and/or reports. The mid-term evaluation of the project was carried out by an external evaluator in a three-month process of reviewing documentation and holding evaluation workshops in Argentina and Peru. Diverse dissemination measures range from a project website and Facebook page, the publication of newsletter articles, participation in and organization of Erasmus+ events.

Challenges

Particular challenges were found in changes at the level of legislation concerning university structures and activities, e.g. stricter requirements for student internships such as a minimum salary/remuneration, aimed at protecting the students from excessive work without payment, but also making it impossible for some smaller companies to accept interns in the first place.

In general, the communication flow between such a large team of coordinators and even more partner organizations turned out to be really challenging. With many partners in remote areas, different summer and public holidays, all activities have to be scheduled extra carefully and ahead of time. The collection of documents on a shared platform and skype conferences have proven helpful, as well as covering as many topics as possible at the in-person consortium meetings.

Conclusion

The project’s main approach to strengthening cooperation between the livestock sector and university programmes on animal science has been proven relevant in the initial survey and continuous feedback of project activities. Cooperation mechanisms, which had mostly been based on personal contacts with few formal and organized structures, turn out to be very important and of mutual benefit. Internships are received with great motivation from all sides – students, professors and industry/farmers.

Financial support by the EU was vital to initiate processes, upgrade equipment and run pilot internships. EDULIVE also provides transcultural exchange on regional and international level.

The participatory project design, a high level of transparency, quality management and dissemination, as well as the inclusion of authorities, make for long-term sustainability.